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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,516	12/05/2001	Rodney William Pope	30691-00045	2615

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EXAMINER

MENON, KRISHNAN S

ART UNIT PAPER NUMBER

1723

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

v b

<b>Office Action Summary</b>	Application No. 10/007,516	Applicant(s) POPE ET AL.	
	Examiner Krishnan S Menon	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 and 45-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50-54 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-17, 20-36, 46, 47 and 55-59 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 18, 19, 37, 38, 48, 49, 60 and 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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### DETAILED ACTION

Claims 1-38 and 45-61 are pending.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 13-16, and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP-10-165,777.

JP (777) teaches a filter device comprising a housing with ends (fig 1,3), a ring (2) joinable to the end with an annular anchor(22-fig 2) on the interior portion of the ring, a flange cap (6),potting material (5) and plurality of hollow fiber membranes (4), inlet and outlet ports through the flange caps (61) and housing (12), and flange cap is separated from the first end of the housing by the ring as in instant claim 1-3, 14 and 15. The microfiber is hollow fiber and semipermeable as in instant claim 4 and 16 (abstract, para 0002). The housing is cylindrical as in instant claim 13 and 25 (see figures). Re the newly added limitation of the annular anchor having upper and lower surfaces which are encased in the potting material, JP-777 teaches encasing a lower surface, which is the bottom surface of the part 22, and an upper surface, which is the surface facing the radial direction of part 22, in the potting material. Even the top surface of the part 22 is at least partially encased in the potting material, and part 7 is at least partially seated on the potting material 5 (see figures).

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2. Claims 12, 24, 26 – 30, 34 and 35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP (777).

JP (777) teaches a filter device prepared by the process comprising joining a ring having an annular anchor (2,22-fig 2) on an end of a housing, inserting a plurality of micro-fibers in the housing, encasing the microfibers and the anchor in a potting material and joining a flange cap to the ring as in instant claims 26 and 28 (see specification). The filter device formed also has inlet and outlet ports on the flange cap and the housing (see fig 1) as in instant claim 35. The different process steps of welding, centrifuging, etc. as in instant claims 27,29,30 and 34 are immaterial to the product as the product limited by the process is non-patentable over the prior art if the product formed is same as or obvious from the prior art made by a different process (**In re Thorpe**, 227 USPQ 964 (1985)).

JP teaches all the limitations of claims 1 and 14, including welding for the joining of the ring and end cap to the housing. Claims 12 and 24 add further limitation of laser welding. However, laser welding is a process step, and is unpatentable over the prior art (**In re Thorpe**)

Re the newly added limitation of the annular anchor having upper and lower surfaces which are encased in the potting material, JP-777 teaches encasing a lower surface, which is the bottom surface of the part 22, and an upper surface, which is the surface facing the radial direction of part 22, in the potting material. Even the top surface of the part 22 is at least partially encased in the potting material, and part 7 is at least partially seated on the potting material 5 (see figures).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 8-11, 20-23, 31-33 and 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP (777) in view of Lacy et al (US 6,280,619).

Claims 8-11, 20-23, 31-33: JP (777) teaches all the elements of the instant claims as in claims 1-4, 13-16, 25, 26, 28 and 35, and spin-welding as a means to join the ring and the end caps to the housing (para 0042), but does not teach details of spin welding like the nubs and the channels to assist the spin welding. Lacy (619) teaches spin welding as a means for joining housing and end cap of a filter (see fig 4 and 5). Instant claims 8 and 20 recite spin welding; 9, 21 and 31 recite the nubs to assist spin welding; and 10,11,22,23,32 and 33 recite the channels to contain the flash from the spin weld. Details of spin welding including the ledges (46), shield or 'flash' cover (48), and channels formed to contain the flash (at 70 or 48) are seen in fig 4 and 5 and col 3 lines 47-57 of Lacy (619). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Lacy (619) in the teaching of JP (777) because JP(777) does not provide spin welding details. It may also be noted that the specific

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structural details provided for spin welding (like the nubs and the channels) do not structurally change the apparatus (in re Thorpe).

Claims 55-58: JP (777) teaches a filter device comprising a housing with ends (Fig 1), a ring joinable to the end with an annular anchor (2,22) on the interior portion of the ring, a flange cap (6), potting material (5) and plurality of hollow fiber membranes (4), inlet and outlet ports through the flange caps (61) and housing (12); all in figures, as in instant claim 55 and 56. The filter device formed also has inlet and outlet ports on the flange cap and the housing (see fig 1) as in instant claim 57.

JP (777) also teaches a means for joining the ring, the end-caps and the housings (para 0042), but is silent on the details of accommodating the residue form the joining of the parts as in the instant claims. Lacy (619) teaches such a means for joining housing and end cap of a filter (see fig 4 and 5) with shield or 'flash' cover (48), and channels formed to contain the flash (at 70 or 48) are seen in fig 4 and 5 and col 3 lines 47-57. It would be obvious to one of ordinary skill in the art at the time of invention to use the methods of accommodating residue form the joining of the parts as taught by Lacy (619) in the teachings of JP (777) since it is unclear on such details. Also, 'methods of accommodating the residue' is a process step which does not contribute structurally to the final product - In re Thorpe.

2. Claims 5,17,36 and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP(777) in view of Elgas et al (US 5,922,202)

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JP (777) teaches the limitations of claims 1-3, 14, 26, 34 and 35. Instant claims add the further limitation of surface treatment to modify the surface energy of the anchor. Elgas (202) teaches surface treatment by corona discharge of the hollow fiber surfaces to improve the bond between the hollow fibers and the potting compound in a hollow fiber device (col 8 lines 45-55). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Elgas in the teaching of JP (777) to have such a surface treatment on the anchors of the ring to improve the bonding of the potting material on the surface and prevent delamination.

Re the newly added limitation of the annular anchor having upper and lower surfaces which are encased in the potting material, JP-777 teaches encasing a lower surface, which is the bottom surface of the part 22, and an upper surface, which is the surface facing the radial direction of part 22, in the potting material. Even the top surface of the part 22 is at least partially encased in the potting material, and part 7 is at least partially seated on the potting material 5 (see figures).

3. Claims 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP-777 in view of Lacy (619) as in claim 56 above, and further in view of Elgas et al (US 5,922,202).

JP in view of Lacy does not teach surface treatment to modify the surface energy of the anchor as in instant claims 59. Elgas (202) teaches surface treatment by corona discharge of the hollow fiber surfaces to improve the bond between the hollow fibers and the potting compound in a hollow fiber device (col 8 lines 45-55). It would be

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obvious to one of ordinary skill in the art at the time of invention to use the teaching of Elgas (202) in the teaching of JP-777 in view of Lacy to improve the bonding of the potting material on the surface and prevent delamination.

***Allowable Subject Matter***

Claims 50-54 are allowed.

Claims 6,7, 18,19, 37,38, 48,49, and 60,61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The claims indicated as allowable are based on a combination of limitations (1) a ring having an annular anchor is attached to an end of the housing and a flange cap is attached to the ring, with the ring separating the flange cap from the housing, and (2) the annular anchor having rounded ridges on the upper and lower surfaces of the anchor to prevent delamination of the potting material (3) radial channels on the annular anchor for air escape during potting. The combinations of these limitations are not taught by, or obvious to one of ordinary skill in the art from, the references, as explained below.

The closest prior arts to the instant claims are Antoni (586), JP-777, Eguchi (601), Lacy (619) and Elgas (202). Antoni teaches a hollow fiber filter device having an anchor ring to lock in the potting material to prevent delamination as in the claims.

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However, unlike in the claims, the flange cap is attached directly to the housing (not separated by the ring) with the anchor ring attached to the flange cap. JP-777 teaches a hollow fiber filter device with a housing, an anchor ring and a flange cap, with the anchor ring attached to the housing and the flange cap attached to the anchor ring, so that the end of the housing is separated from the flange cap by the ring as in the claims. The anchor rings of JP-777 and Antoni do not have the limitations of the rounded ridges formed on the upper and lower surfaces and the radial channels for air vents. The anchor ring of JP-777 is meant to provide structural and dimensional stability of the filter ends, at the same time facilitating easy insertion of the fiber bundle by providing an angular surface (21) to the ring (described as fiber insertion tool). There is no suggestion to combine the features of JP-777 with the features of Antoni in either of the references, and it would not be obvious to one of ordinary skill in the art to make such a combination. Eguchi reference teaches the ridges and the radial channels for the purpose of locking in the potting material and prevent delamination, with air vent during potting. However, JP-777 cannot be modified with Eguchi because such a modification would prevent the function of the part 21 as a fiber-bundle insertion tool in JP-777. Lacy teaches only structures suitable for welding, Elgas teaches surface treatment for better adhesion of the potting material, and both these references do not overcome the deficiencies of Antoni, JP-777 and Eguchi.

### ***Response to Arguments***

Applicant's arguments filed 4/1/04 have been fully considered but they are not persuasive for claims 1-38, 45-49 and 55-61.

Contrary to applicant's arguments, part 22 of JP-777 has an upper and a lower surface encased inside the potting material (septum 5), which is explained in the rejection.

Applicant's arguments re the JP-777 reference that part 2 and 22 are designed to reduce the stagnation of blood is correct. However, this is the intended use: A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Applicant also argues that the JP-777 reference teaches away: The question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. *Celeritas Technologies Ltd. v. Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998)

About the additional arguments with regard to the applicant's rounded ridges 318 modifying the JP-777 ref, those limitations are not recited in the rejected claims, therefore, arguments are not commensurate with the claims.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon  
Patent Examiner

  
JOSEPH DRODGE  
PRIMARY EXAMINER